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
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# PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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TITLE OF THE INVENTION (280 characters max)					
MULTI-SITE SNAP INJECTION SYSTEM					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number		26822		 PATENT TRADEMARK OFFICE	
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ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification	Number of Pages	6	<input type="checkbox"/> CD(s), Number		
<input checked="" type="checkbox"/> Drawing(s)	Number of Sheets	1	<input checked="" type="checkbox"/> Other (specify)	ASSIGNMENT; COVER SHEET	
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input checked="" type="checkbox"/>	A check or money order is enclosed to cover the filing fees				FILING FEE AMOUNT (\$)
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/>	No.				
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Respectfully submitted,

SIGNATURE

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04/12/2004

REGISTRATION NO.

27,792

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P19LARGE/REV05

MULTI-SITE SNAP INJECTION SYSTEM

The present invention is generally directed to the  
5 administration of a medicament and is more particularly  
directed to a multi-site injection system for dermal delivery  
of a medicament.

SUMMARY OF THE INVENTION

10

A multi-site injection system in accordance with the  
present invention generally includes a needle plate and a  
plurality of hollow needles fixed to an outside of the needle  
plate, for transport of a medicament from an inside of the  
15 needle plate and into a stratum corneum of a user.

A pressurizer is provided and disposed over an inside of  
the needle plate to form a cavity therebetween in  
communication with the hollow needles.

20

In addition, an injection port is disposed in the  
pressurizer for introducing the medicament into the cavity.

More particularly, in accordance with the present  
25 invention, the pressurizer is flexible for causing uniform  
transport of the medicament through the needles.

Accordingly, the pressurizer provides a means for forcing  
the medicament from the cavity through needle lumens.

Preferably, the medicament comprises botulinum toxin.

BRIEF DESCRIPTION OF THE DRAWINGS

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The advantages and features of the present invention will be better understood by the following description when considered in conjunction with the accompanying drawings in which:

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Figure 1 is a perspective view of a multi-site injection system in accordance with the present invention generally showing a needle plate with a plurality of needles projecting therefrom and fixed to an outside surface of the needle plate;

15

Figure 2 is a perspective view of the multi-site injection system shown in Figure 1 showing a reverse side with a pressurizer disposed over an inside of the needle plate along with an injection port and a pressurized reservoir of medicament interconnected to the port via a tube; and

20

Figure 3 is a partial cross section of the injection system shown in Figures 1 and 2 illustrating a cavity for and between the pressure plate and an inside surface of the needle plate illustrating medicament flow from the pressure reservoir through the tube into the cavity and through hollow needles for transport of the medicament into a stratum corneum of a user.

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DETAILED DESCRIPTION

With reference to Figures 1 and 2, there is shown a multi-site injection system 8 in accordance with the present invention generally including a flexible needle plate 10 having a plurality of hollow needles 12 fixed to an outside surface 16 of the needle plate 10. The needle plate 10 may be formed from any suitable material and the needles may be formed thereinto or affixed thereto in any conventional manner.

As more clearly shown in Figure 2, the system 8 may include a pressurizer 20, which may be in the form of a flexible blatter or the like, for causing uniform pressure across an inside surface 24 of the needle plate 10.

As shown in Figure 3, the pressurizer 20 establishes a cavity 26 between the pressurizer 20 and the inside surface 24 of the needle plate 10.

As shown in Figure 3, the inside surface 24 of the needle plate 10 may include a separate containment element 28 to facilitate construction of the system 8. Thus, as illustrated the pressurizer 20 provides a means for forcing medicament, which is preferably botulinum toxin from the cavity 26 through needle lumens 32. Spacing and orientation of the needles on the needle plate 10 is determined by the intended use of the needle plate 10 on specific user body parts, not shown.

An injection port 34 is preferably interconnected to a pressure reservoir 36 through a tube 40. Control of medicament flow from the pressure reservoir 36 through the tube and into the cavity 26 may be controlled in any  
5 conventional manner.

Pressure medicament in the cavity 26 thus forces the medicament into a stratum corneum 42 of a user, not shown.

10 Pressure provided by the flexible pressurizer as indicated by the arrows 44, 46 enable uniform flow of medicament as indicated by arrows 48, 50 through the needle lumens 32 as indicated by arrows 52, 54.

15 Although there has been hereinabove described a specific multi-site snap injection system in accordance with the present invention for the purpose of illustrating the manner in which the invention may be used to advantage, it should be appreciated that the invention is not limited thereto. That  
20 is, the present invention may suitably comprise, consist of, or consist essentially of the recited elements. Further, the invention illustratively disclosed herein suitably may be practiced in the absence of any element which is not specifically disclosed herein. Accordingly, any and all  
25 modifications, variations or equivalent arrangements which may occur to those skilled in the art, should be considered to be within the scope of the present invention as defined in the appended claims.

## WHAT IS CLAIMED IS:

1. A multi-site injection system comprising:
  - a needle plate;
  - 5 a plurality of hollow needles, fixed to an outside of said needle plate, for transport of a medicament from an inside of said needle plate and into a stratum corneum of a user;
  - a pressurizer disposed over an inside of said needle
  - 10 plate to form a cavity therebetween in communication with the needles; and
  - an injection port disposed in said pressurizer for introducing the medicament into said cavity.
- 15 2. The system according to claim 1 wherein said pressurizer is flexible for causing uniform transport of the medicament through the needles.
- 20 3. A multi-site injection system comprising:
  - a needle plate having an inside and an outside;
  - a pressurizer disposed on the needle plate inside to form a cavity therebetween;
  - a medicament disposed in said cavity;
  - a plurality of needles disposed on the needle plate
  - 25 outside each needle having a lumen in fluid communication with said cavity for transport of the medicament into a stratum corneum of a user; and
  - means for forcing medicament from said cavity through needle lumens.



4. The system according to claim 3 wherein the means for forcing medicament comprises an injection port disposed in said pressurizer.

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5. The system according to claim 4 wherein said pressurizer is flexible for causing transport of the medicament through the needle lumen.

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6. The system according to any one of claims 1-5 wherein said medicament comprises botulinum toxin.

